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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,541	12/20/2001	Takayuki Araki	W-2382	4040

466 7590 04/23/2003

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EXAMINER

PAULRAJ, CHRISTOPHER

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 04/23/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,541

Applicant(s)

ARAKI ET AL.

Examiner

Christopher G. Paulraj

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/585,269.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-5, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagohashi et al. (U.S. Patent 6,168,752) in view of Komagata et al. (U.S. Patent 5,714,238).

Kagohashi et al. discloses that conductive metal powders, particularly Ni powders, are useful for internal electrodes of multi-layer ceramic capacitors (see col. 1, lines 14-17). Kagohashi et al. does not specifically disclose that such nickel powders are surface-modified with a phosphate compound, a phosphite compound, or a hydrophosphite compound. However, Komagata et al. discloses a conductive adhesive (paste) which comprises metal particles made from nickel or nickel-boron alloy and surface treated with a polyalkylene phosphate compound or a derivative thereof (abstract). Examples of polyalkylene phosphate derivatives include phosphoric acids (col. 4, lines 1-5). The average diameter of the particles is 0.5 to 30 μm , preferably 2 to 10 μm . The amount of surface treating agent is generally within the range of 0.1 to 5% by weight, preferably 0.5 to 3% by weight based on the total weight of the metal particles. One skilled in the art would have found it obvious to use the surface-treated nickel particles of Komagata et al. in the internal electrodes of multi-layer ceramic

Art Unit: 1773

capacitors, as disclosed by Kagohashi et al. The motivation for doing so would have been to optimize the adhesive strength, the capacitance, and the dielectric loss tangent of the internal electrode (see Komagata et al., col. 11, lines 20-25).

3. Claims 3, 6, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagohashi et al. in view of Komagata et al. as applied to claims 1-2, 4-5, 7-8, and 10-11 above, and further in view of Iri et al. (U.S. Patent 5,272,223).

While Komagata et al. discloses that the metal particles may contain dispersing agents such as isopropyltriisostearoyl titanate, the reference does not specifically disclose the inclusion of phosphate, phosphite, or hypophosphite containing titanate coupling agent. However, Iri et al. discloses that titanate coupling agents such as isopropyltriisostearoyl titanate, isopropyl tri(di-octyl pyrophosphate) titanate, and bis(di-octyl pyrophosphate) oxyacetate titanate may be added to composite metal particles in order to improve performance such as adhesion, water resistance, and chipping resistance. Since Iri et al. has established equivalency between isopropyltriisostearoyl titanate and other phosphate containing titanate coupling agents, it would have been considered obvious to one of ordinary skill in the art to include phosphate containing titanate coupling agents in the adhesive disclosed by Komagata et al. The motivation for doing so would have been to improve adhesion water resistance, and chipping resistance.

Information Disclosure Statement

4. Receipt of Information Disclosure Statement filed on December 20, 2001 is acknowledged and has been made of record. Foreign language documents were only considered to the extent of what their English abstracts provided.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher G. Paulraj whose telephone number is (703) 308-1036. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.

cgp

cgp
April 18, 2003


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700